**CSCI 1301 Lecture 3**

Key points of this lecture:  
1- Overview of Integrated Development Environment (IDE).  
2- Data types in Java.  
  
Integrated Development Environment (IDE):  
  
Please realize the difference between text editors like “notepad” and word processors such as “Microsoft Word”. Word processors tend to add hidden characters to your document to help preserve the layout. That will break your code. However, text editors don’t add those hidden characters and don’t create a page layout. Therefore, if you try to write Java code using a word processor it may not work. You can write your code using any text editor.   
  
  
IDE are created to aid programmers while writing their code. IDE provides added features such as different colors for Java reserved words or API standard library, checking syntax errors, or auto complete. Also compilation will happen automatically while writing the code and errors will be flagged or highlighted. Another great feature of all IDEs is that running the program is as simple as clicking a button. As a result, developers can develop in a much shorter time. NetBeans and Eclipse are the top two Java IDEs.   
  
  
Data types in Java:  
  
There are two data types in Java, Objects and Primitives. There are eight primitive types in Java, each with specific format and size.   
  
  
byte is a primitive data type to store a byte long integer or 8 bits.  
  
short is a primitive data type to store a short integer or 16 bits  
  
int is a primitive data type to store an integer (size is 32 bits).  
  
long is a primitive data type to store a long integer (size is 64 bits).  
  
float is a primitive data type to store a single precision floating point (size is 32 bits)  
  
double is a primitive data type to store a double precision floating point (64 bits)  
  
char is a primitive data type to store a unicode character  
  
boolean is a primitive data type to store a boolean value of true or false.  
  
  
  
byte, short, int, long, float, and double represent numbers. float and double represent numbers with decimal points. The rest represent whole numbers without decimal point.  
  
Let’s take the byte and the int types, as an example, to know how many values can be stored in each primitive type. The byte is 8 bits and according to the binary representation that will be 28 which is 256. When we include the zero, we’ll have byte to represent any whole number in the range:   
  
*Signed:* From -128 to 127 or from − (27) to 27 − 1  
  
*Unsigned:* From 0 to 255 which equals to 28 − 1  
  
Therefore, if you need a placeholder for the number 5000000, byte can’t be used. We can use int. Because int is 232